AP072

VeinViewer-assisted peripheral venous access in pediatric patients: A randomized controlled trial

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Background: Peripheral venipuncture in infants and children is technically challenging because their veins are small and located deep in the subcutaneous tissue which makes them difficult to palpate or visualize. In this study, we sought to determine if the use of the VeinViewer (Luminetx Corporation, Memphis, Tenn) in children facilitates peripheral venous access.

Materials and Methods: This was a nonblinded, randomized controlled trial of a convenience sample of pediatric patients younger than 20 years old requiring intravenous access in the pediatric ward. Prior to the randomization, the DIVA (difficult intravenous access) score of 4-variable proportionally weighted rule (3 points for prematurity, 3 for younger than 1 year, 1 for 1–2 years of age, 2 for vein not palpable, and 2 for vein not visible) was estimated. We also decided vein categories (easy, intermediate and difficult) according to nurse opinion. Then patients were randomly allocated to undergo VeinViewer-assisted or standard peripheral venous access. Primary end point was the first-attempt success rate. Stepwise logistic regression analysis was used to identify factors associated with the first-attempt success.

Results: A total of 111 patients were evaluated: 54 in the VeinViewer group and 57 in the traditional group. Patient demographics and factors related to the success of vein access were similar in both groups. Analysis by vein assessment category yielded a similar rate of successful first-attempt in both groups for easy veins. However, for difficult veins over DIVA score 4, first-attempt success rate increased from 25% in the traditional group to 58.3% in the VeinViewer group (p=0.026). Factors associated with the first-attempt success were patient age and type of delivery. Patient body mass index and the experience of nurse had no significant impact on the first-attempt success.

Conclusion: The VeinViewer facilitates the peripheral venous access in pediatric patients with difficult veins enhancing the first-attempt success rate.

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How well do nursing students in Iceland retain knowledge following ILS courses?

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Research findings have revealed that nurses are likely to discover the victims of in-hospital cardiac arrest and thus necessary to have enough knowledge and training in resuscitation. Research findings point out that knowledge is not generally retained.

Purpose: To find out if knowledge retains by nursing students after participating in an Immediate Life Support (ILS) course and whether it is affected by age.

Methods: Quantitative descriptive research method were used. The sample consisted of 91 nurse students and data collection took place in the period from Autumn 2009–Spring 2011 The questionnaires, included BLS and ALS questions, were handed out at the end of each ILS course (QI) and a follow up 5–6 months later (QII).

Findings: Results show that there is a significant difference between QI and QII with average of 14.2% deterioration in knowledge. There is also a difference concerning age groups. The average deterioration was 16.5% in the age group of 20–20 years, 9.8% for 31–40 years and 13.6% for older than 40 years. The results also revealed that knowledge score was highest in the youngest age group (8.98 in QI and 7.31 in QII) and lowest in the oldest group (7.82 in QI and 6.45 in QII). The BLS questions were correctly answered in 95.5% cases of QI and 81% in QII. The ALS questions were correctly answered in 74.2% cases of QI and 58.7% in QII. The largest decline concerned knowledge about the length of the breathing check or 30.4% between QI and QII.

Conclusions: Findings show nursing students retain theoretical knowledge to some extent but the knowledge degrades in all aspects of the theoretical knowledge over time. Regular continuing education for nursing students and nurses is important in order to maintain the knowledge retention.

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Process of emergency medical dispatch – An international survey

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Background: The role of emergency medical dispatch is important to the overall performance of an emergency medical system. Research in cardiac arrest shows significantly increased outcome if the dispatcher recognizes the situation correctly. Prehospital emergency care is organised differently between countries and access to different levels of care varies. The aim of this study was to compare and describe emergency medical dispatch systems and to identify available data from these systems for research.

Material and Methods: A cross-sectional study was performed during 2011. A web-based questionnaire concerning the organization and activities was sent to directors of dispatch centers in several countries/regions (Canada, Czech Republic, Belgium, Denmark, Finland, Japan, Norway, Scotland, Sweden, The Netherlands, Western Australia). The questionnaire was developed by a group of experts in the field of dispatching.

Results: Of eleven distributed questionnaires eight were answered (73%). All but one of the participating dispatch centers prioritizes all calls into different acuity levels. The centers with prioritization have at least three levels of priority but two different systems are used, Advanced Medical Priority Dispatch System (AMPDS) and Criteria Based system. There are substantial differences regarding the formal education of the dispatchers. The centers have different levels of personnel, call-takers and medical educated personnel. Quality controls are performed to some extent, mainly through co-listening and half of the centers survey patient satisfaction. Two centers have a daily feedback between the dispatch center and the ambulances. Not all centers have a medical director in their organization.

Conclusion: We found differences between dispatch organizations that could have significant impact on the early emergency medical care. When performing research in emergency medicine including the prehospital phase, organizational data from the dispatch center, should be taken into account. Further collaborative research is warranted to determine optimum emergency medical dispatch practice.

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AED: access, ethics and data protection in out-of-hospital cardiac arrest research

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Ambulance data collected in Ireland has not been utilised until recently. In 2008 a retrospective review of existing ambulance data was proposed to study out-of-hospital cardiac arrest in Dublin Mid-Leinster, an area of 46,380 km^2, population 1,499,705. Access to the data and ethical approval were granted subject to approval from the Data Protection Commissioner.

In Ireland, the Data Protection Acts 1988 and 2003 provide the legislative basis in relation to Data Protection. The Office of the Data Protection Commissioner was established under the 1988 Act and the 2003 Amendment Act brought Irish law into line with the 1995 EU Directive -95/46/EC which sets similar common standards for privacy across the EU.

The Data Protection Commissioners confirmed that in Ireland, health information is considered sensitive personal data and there is an expectation that such data should not be disclosed without consent, other than those directly involved in patient care and related activity. While recognising this protective function the difficulty imposed by such legislation has been presented in the literature internationally. Doll and Peto (2001) suggest that in the 2400 years since Hippocrates, it has always been recognised that healthcare advances by the sharing of experience. (Herlitz 2002) counsels that patients suffering from cardiac arrest cannot give informed consent.

Ultimately this study did proceed on the basis of obtaining a contract with the Health Service Executive (HSE) and that all data were anonymised prior to removal from the HSE. In 2009–2010, all 32,128 ambulance records for 2008 were manually reviewed, 214 cardiac arrests were identified and analysed using Utstein criteria. However, the proposed follow-up study on final outcome was not permitted under Data Protection Legislation, thus limiting the overall findings of a robust study. This experience exemplifies the need to continue dialogue on this issue. To echo Herlitz (2002)more still needs to be learnt.